

FastTrack RC Summer Camps



Middle Bridge & High School (Grades 7-12)

High powered radio-controlled cars are the hook and race engineering the key to success in FastTrack RC Turn-Key Summer Camps.

Engage your students in design and engineering challenges that show them just how fun and relevant science, technology, engineering and mathematics (STEM) is to their world.

Through the 5-day camp, participants use technology and apply science and math to maximize challenge scores. How teams optimize performance depends on your available technology and educational goals.

Get students excited about their future and about learning through one of the six available camps:

1. Hybrid Camp
Ease students into applied STEM with small and big cars
2. Race Engineering
Light on Fabrication & Heavy on Math Modeling
3. P.I.T. Now (Petroleum Independence Now)
Recharge your batteries with renewables
4. Car, Wings & Kites
A survey of light fabrication, math modeling & technology
5. Machine Shop
Focus on heavy design and fabrication
6. Kites, Bridges & Cars
Tow a kite you make over the bridge you build

The kids are calling up all year asking, "How do I get in that [FastTrack RC] Camp?". They loved it, graphing and all.

Beth Lingle, CTE Coordinator in Union County, NC



FastTrack RC Camp Kits provide you with the resources and training you need to run a successful STEM camp.

Curriculum & Training

- Curriculum with daily agenda, 24 x logbooks, preparation schedule, assessments and instructions
- 5 x 60 min, interactive web-based training sessions.
- Web portal where you can download auxiliary resources and communicate with Ten80 and other educators.

Non-Consumable Materials:

- 1:10 Scale RC Cars with rechargeable batteries
- Stopwatches, Tape Measures
- Smart Battery Chargers
- Camp-specific materials such as bridge materials, 3D CAD, etc.
- List of materials you supply

FastTrack RC Partners Include

The FastTrack RC is brought to you by Ten80's engineer-educators and is sponsored in part by the following.



www.fasttrackrc.com • www.ten80education.com
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To meet your students' needs using the technology available, Ten80's engineer-educators offer six different FastTrack Racing Challenges (FTRC) Camps. Contact our team to discuss your unique set of needs, resources and to build the program that's right for you.

FTRC Camp Curriculum outlines the detailed agenda and content for a five-day camp with optional extensions. FastTrack RC Camp Kits serve as the base kit upon which you can build a formal, long-term and evolving STEM program in your science, math and technology classrooms. Training takes place over the internet in five, 1-hour sessions and is also available face-to-face.

Camp	Hybrid	Race Engineering	Car Wings & Kites	Fabricate Aerodynamics	Transportation	P.I.T. Now (Alt. Energy)
Required Technology ¹	<ul style="list-style-type: none"> • Computer lab • Spreadsheets • Projection system • Hand tools 	<ul style="list-style-type: none"> • Computer lab • Spreadsheets • Projection system 	<ul style="list-style-type: none"> • Computer lab • Spreadsheets • Projection system • Hand tools 	<ul style="list-style-type: none"> • Computer lab • Projection system • Machine Shop (drill press, CNC, 3D printer, etc.) 	<ul style="list-style-type: none"> • Computer lab • Spreadsheets • Projection system • Video and still cameras 	<ul style="list-style-type: none"> • Computer lab • Spreadsheets • Projection system • Charge Station Camp Kit
Curriculum, Kit & Web Training Cost	\$ 6,073	\$ 5,972	\$ 6,472	\$ 6,472	\$ 6,472	\$ 5,972 + Charge Station (Add'l Mat's)
Web Training Cost	Included	\$ 750	\$ 750	\$ 750	\$ 750	\$750
Additional Material Costs ²	\$ 160	\$ 40	\$ 160	\$ 40	\$ 40	\$ 500 - \$ 3,300
Suggested Personnel	1 lead, 1 assistant, 1 helper	1 lead, 1 assistant, 1 helper	1 lead, 1 assistant, 1 helper	1 lead, 1 assistant, and shop pro's	1 lead, 1 assistant, 1 helper	1 lead, 1 assistant, 1 helper

Hybrid Math2Go & FTRC: This camp uses both the simple 'small cars' of Math2Go and the technologically advanced FTRC 'big cars'. Math2Go Challenges are solved with data that reveals clear patterns when modeled mathematically. Students use technology like SolidWorks³ 3D Design and Analysis software to solve more complicated FTRC Challenges ('Big Cars'). Hybrid kit includes six 'small car stations' and two 'big car' stations through which student teams rotate.

Race Engineering: Improve race performance through mathematical modeling, physics and 3D CAD Analysis. Choose the best gears, map the ideal drive path around a curve, design and test a car wing in SolidWorks³ and (just like the car companies do) use a skid pad and Newton's Laws of Motion to find the coefficient of friction.

Car Wings & Kites: Model performance (with graphs and charts) of the FTRC car towing a kite. Use SolidWorks³ to design parts that improve aerodynamic performance then fabricate those parts using foam, mesh and simple tools.

Fabricate Aerodynamics: Use SolidWorks³ to analyze and improve aerodynamic performance of the FTRC car then use advanced manufacturing techniques to fabricate parts like a chassis underplate and car wing.

Transportation: Use the FTRC car to examine transportation issues like car design (using SolidWorks³), road gradients, exit ramps, highway materials and tire design as well as accident reconstruction and its implications on design decisions.

P.I.T. Now (Petroleum Independent Transportation NOW!): Examine how the resources in your own community can serve to power the FTRC electric cars then build a charging station to get 'off the grid'.

¹ Graphing Calculators are optional in all camps. SolidWorks must be installed on network.

² Additional costs to provider include facilities, overhead, personnel, food and prizes

³ SolidWorks is a leading, intuitive 3D design program that includes a Flow Simulator that students use as a 'Virtual Wind Tunnel'.

